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IOWA STATE BOARD OF HEALTH
RESTRICTION AND PREVENTION
OF
SMALL POX

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RESTRICTION AND PREVENTION

OF

SMALL POX.

WITH PLANS AND DESCRIPTION OF

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SMALL POX HOSPITAL

ISSUED BY THE

Low STATE BOARD OF HEALTH,

FOR THE USE OF

LOCAL BOARDS AND HEALTH PHYSICIANS OF IOWA.

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IN order that this document may do the greatest possible good, it is hoped that each one who receives it will not only make such use of it as will tend to disseminate most widely the suggestions contained therein, but will also *act for the restriction or prevention of Small Pox* in accordance with its suggestions, or by other effective measures.

Any communication on the subject may be addressed to STATE BOARD OF HEALTH, DES MOINES, IOWA.

"Rules and Regulations made by the State Board of Health, and directed to Local Boards of cities, towns and townships, are of full force and effect upon the people, without subsequent indorsement or action of such Local Boards."—*Decision of the Attorney-general, January 4, 1881.*

RESTRICTION AND PREVENTION OF SMALL POX.

REGULATIONS ISSUED BY THE STATE BOARD OF HEALTH.

NATURE OF THE DISEASE.

SMALL Pox is prevalent in many parts of this State. It is a part of the history of the disease that it occurs at certain intervals, at periods not absolutely accurate or well defined, but sufficiently distinct to attract attention. This periodicity is largely due to changes in population, rather than any inherent law of the disease. It is formidable and fatal, and believing it to be preventable, the State Board desires to disseminate as widely as possible, among the people of the State, the knowledge of rational means for its restriction.

The specific contagion developed by the disease itself, and by which it spreads, is diffused by the exhalations (breath, perspiration, etc.) of the patient, through the air immediately surrounding him, as well as by clothing or other solid substances that have been brought into contact with the products of the disease.

As a rule, the virulence or malignancy of the contagion is in direct proportion to the severity of the case from which it emanates, though malignant cases may result from exposure to a mild case.

The State Board of Health have adopted and issued the following regulations:

RESTRICTION OF THE DISEASE.

Small Pox is a contagious disease, and hence the strict observance of the following precautions is of very great importance.

1. In order that the guardians of the public health may have early warning, **it is important that every case of Small Pox be promptly reported to the Local Board of Health.**

“Whenever any *householder* shall know that any person within his family is taken sick with the small pox, scarlet fever, diphtheria, or any other disease danger-

ous to the public health, he shall immediately give notice thereof to the board of health, or to the health officer of the township [city or town] in which he resides; and if he shall refuse or neglect to give such notice, he shall forfeit a sum not exceeding one hundred dollars.”(1)

“Whenever any physician shall know that any person whom he is called to visit is infected with the small pox, scarlet fever, diphtheria, or any other disease dangerous to the public health, such physician shall immediately give notice thereof to the board of health, or health officer of the township [city or town] in which such diseased person may be: and every physician who shall refuse or neglect to give such notice, shall forfeit, for each offense, a sum not less than fifty nor more than one hundred dollars.”

2. **The Local Board of Health** and the physician in charge of cases of this disease should coöperate for its restriction. The board must particularly guard against its spread by cases where no intelligent physician is employed.

“When the small pox, scarlet fever, diphtheria, or any other disease dangerous to the public health, is found to exist in any township [city or town] the board of health shall use all possible care to prevent the spreading of the infection, and to give public notice of infected places by such means as in their judgment shall be most effectual for their common safety.”

“Local boards of health must make such regulations as they may deem necessary for the public health and safety respecting any articles which are capable of containing or conveying any infection or contagion, or of creating any sickness, or when such articles shall be brought into, or conveyed from, their township, or into or from any vessel; and if any person shall violate any such regulation he shall forfeit a sum not less than twenty dollars.”

The general laws of this State provide that the mayor and aldermen of cities and towns and the trustees of townships, “shall have and exercise all the powers, and perform all the duties of a board of health.” *Chap. 151, Sec. 13, laws of 1880.*(2)

3. Upon notice being given of cases of Small Pox or Varioloid to the Board of Health of a township, city or town, or to the Health Physician thereof, or whenever any member of said Board or the Health Physician shall have knowledge of any cases of Small Pox or Varioloid within their jurisdiction, some member of the Board or the Health Physician, shall cause a yellow cloth, or card having

(1) Local boards should adopt this regulation and give public notice thereof. The board, or any members thereof, may prosecute all violations as provided in Sec. 23, Chap. 151, laws of 1880.

(2) The Attorney-general decides that Sec. 13 is mandatory, and makes it compulsory upon the officers therein named to perform all the duties of a board of health, in accordance with the object and intent of the law. A refusal or neglect to comply with the statute renders them liable to indictment for misdemeanor.

"Small Pox" conspicuously printed thereon, not less than six inches square, to be fastened upon the front door, or other conspicuous place of each building in which such sickness prevails, said cloth or card to be maintained during the existence of the disease, and until such time as the Health Physician is satisfied the premises have been properly cleaned, disinfected and purified. If said yellow cloth or card is removed without authority from the Health Physician, the name of the person, or the head of the family, occupying the premises, together with the number of the street, or location, shall be published, and the person removing said cloth or card, or causing their removal without authority of the Health Physician, shall be fined a sum not less than fifty nor more than one hundred dollars.

4. Every person affected with Small Pox, or Varioloid, shall be isolated as much as possible from all other persons, and shall occupy a room in which there are no unnecessary articles of furniture, as carpets, cushioned chairs, lounges, window curtains, clothing, etc. The rooms which have been occupied by such diseased persons should, if papered, have the paper removed entirely from the walls; the walls should be whitewashed; the floors scrubbed; the room thoroughly fumigated, disinfected and ventilated before permission is granted to remove the yellow cloth or card of warning.

5. No person recovering from Small Pox shall be permitted to appear on the public streets of any city or town, or the public highway of any township, or in any public place, until he or she is provided with a certificate from the attending physician, or Health Physician of the Board of Health, of such township, city or town, that all danger from contagion, by reason of such disease, is passed.

6. Every person dying of Small Pox should be thoroughly washed with a zinc solution, of double strength, then be wrapped in a sheet wet with the zinc solution, placed in as tight coffin as possible, and buried immediately.

7. No public funeral shall be held at a house where there is a case of Small Pox, or Varioloid; nor in which a death from Small Pox has recently occurred.

8. The room in which there has been a case of Small Pox, or Varioloid, must be thoroughly disinfected immediately.

INSTRUCTIONS FOR DISINFECTION.*

9. It is extremely important that the people should be instructed with regard to disinfection. They must be taught that no reliance can be placed on disinfectants simply because they smell of chlorine or carbolic acid, or possess the color of permanganate, and that, in general, proprietary disinfectants with high sounding names are practically worthless, as they either have no value whatever, or if of value cost many times as much as they are worth, and cannot be used in sufficient quantity.

Disinfection is the destruction of the poisons of infectious and contagious diseases.

Deodorizers, or substances which destroy smells, are, not necessarily disinfectants, and disinfectants do not necessarily have an odor.

Disinfection cannot compensate for want of cleanliness or of ventilation.

10. **Disinfectants to be employed.**—1. Roll sulphur (brimstone) for fumigation.

2. Sulphate of iron (copperas) dissolved in water in the proportion of one and a half pounds to the gallon; for soil, sewers, etc.

3. (Zinc solution) sulphate of zinc and common salt, dissolved together in water in the proportions of four ounces sulphate and two ounces salt to the gallon; for clothing, bed linen, etc. (3)

11. **How to use disinfectants in the sick-room.**—*The most available agents are fresh air and cleanliness.* The clothing, towels, bed-linen, etc., should at once, on removal from the patient, and before they are taken from the room, be placed in a pail or tub of the zinc solution, *boiling hot*, if possible.

*NOTE.—These Instructions were prepared at the request of the National Board of Health by Professors C. F. Chandler, Henry Draper, G. F. Barker, S. O. Vanderpoel, E. G. Janeway and Ira Remsen. They combine the best experience with accurate knowledge of the chemistry of DISINFECTION.

The chemicals here recommended are simple, safe and effectual; they are cheap and can be obtained in every town, and used in the ways here described, they will destroy contagious and infectious matter, and the directions for *Fumigation, Boiling, Ventilation, Cleansing and Drying* can be carried out in any house; but let it be remembered that *there are no substitutes for Cleanliness and Fresh Air.*

The State Board of Health advises that these Instructions be followed.

(3) NOTE.—Carbolic acid is not included in the above list for the following reasons: It is very difficult to determine the quality of the commercial article, and the purchaser can never be certain of securing it of proper strength; it is expensive, when of good quality, and experience has shown that it must be employed in comparatively large quantities to be of any use; it is liable by its strong odor to give a false sense of security.

All discharges should either be received in vessels containing copperas solution, or when this is impracticable, should be immediately covered with copperas solution. All vessels used about the patient should be cleansed with the same solution.

Unnecessary furniture—especially that which is stuffed—carpets and hangings, when possible, should be removed from the room at the outset; otherwise, they should remain for subsequent fumigation and treatment.

12. Fumigation with sulphur is the only practical method for disinfecting the house. For this purpose the rooms to be disinfected must be vacated. Heavy clothing, blankets, bedding, and other articles which cannot be treated with zinc solution, should be opened and exposed during fumigation, as directed below. Close the rooms as tightly as possible, place the sulphur in iron pans supported upon bricks placed in wash-tubs containing a little water, set it on fire by hot coals or with the aid of a spoonful of alcohol, and allow the room to remain closed for twenty-four hours. For a room about ten feet square, at least two pounds of sulphur should be used; for larger rooms, proportionally increased quantities.

13. Premises.—Cellars, yards, stables, gutters, privies, cesspools, water-closets, drains, sewers, etc., should be frequently and liberally treated with copperas solution. The copperas solution is easily prepared by hanging a basket containing about sixty pounds of copperas in a barrel of water, or by dissolving in hot water a few pounds of copperas.

14. Body and bed-clothing, etc.—It is *best* to burn all articles which have been in contact with the persons sick with contagious or infectious diseases (and especially if the disease be Small Pox). Articles too valuable to be destroyed should be treated as follows:

a. Cotton, linen, flannels, blankets, etc., should be treated with the boiling-hot zinc solution, introducing piece by piece; secure thorough wetting, and boil for at least half an hour.

b. Heavy woolen clothing, silks, furs, stuffed bed-covers, beds, and other articles which cannot be treated with the zinc solution, should be hung in the room during fumigation, their surfaces thoroughly exposed, and pockets being turned inside out. Afterward they should be hung in the open air, beaten and shaken. Pillows, beds, stuffed mattresses, upholstered furniture, etc., should be cut open, the contents spread out and thoroughly fumigated. Carpets are best fumigated on the floor, but should afterward be removed to the open air and thoroughly beaten.

15. To disinfect an ordinary room with chlorine gas: having tightly closed all the openings of the room, place in it an open earthen dish containing four ounces of peroxide of manganese. Pour on this one pound of strong muriatic acid, being careful not to breathe the fumes. When certain that continuous evolution of chlorine is taking place, leave the room and close the door.

PREVENTIVE MEASURES.

In the absence of inoculation, which is forbidden by law, vaccination remains the only preventive of Small Pox.

16. **Vaccination.**—When successfully performed, with reliable virus, vaccination, undoubtedly modifies, if it does not furnish absolute protection from, Small Pox; but in view of the fact that there are many instances in which the vaccine disease (for some cause) does not pass regularly through all its stages, thereby becoming a spurious vaccination, the State Board earnestly recommend the **re-vaccination of all persons, old and young, who are not known to have been successfully vaccinated** at some former time. More especially should this precaution be taken during the prevalence of Small Pox in a neighborhood. By the observance of this rule, and primary vaccination in youth, one of the most loathsome diseases may be effectually prevented. The State Board, therefore, strongly recommends vaccination. Bovine virus is the only kind procurable now, and must of necessity be used, but lymph from the arm of a healthy, unvaccinated child is just as good, and is everywhere obtainable, if one point of reliable bovine virus is first obtained. Properly done, with due precaution as to the health and vigor of the subject, and the source of virus used, vaccination may be affirmed to be without danger.

17. The period of incubation of variola is about double that of vaccinia (14 to 7). Hence, if vaccine virus be inserted immediately after exposure to Small Pox, its shorter incubative period will anticipate the other, and if it do not prevent it altogether, will so modify it as to deprive it of its greatest danger. **Immediate vaccination after exposure is important for safety.***

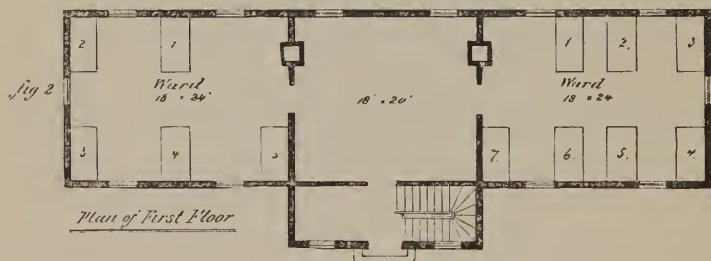
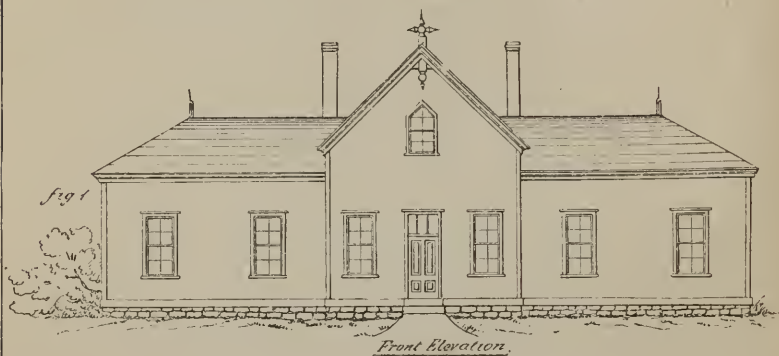
*SECTION 22, chapter 151, laws 1880, provides for the removal of persons infected with small pox; also for other persons in the neighborhood, and declares that the local board "*may take such other measures as may be deemed necessary for the safety of the inhabitants.*" I have no question at all, but that Local Boards of Health have the power to regulate and determine how vaccination shall be done; and that the board may direct all persons shall be vaccinated.—*Decision of the Attorney-general*, Feb. 12, 1881.

PLAN AND DESCRIPTION

OF A

SMALL POX HOSPITAL.

Proposed Plan for a Small-pox Hospital.



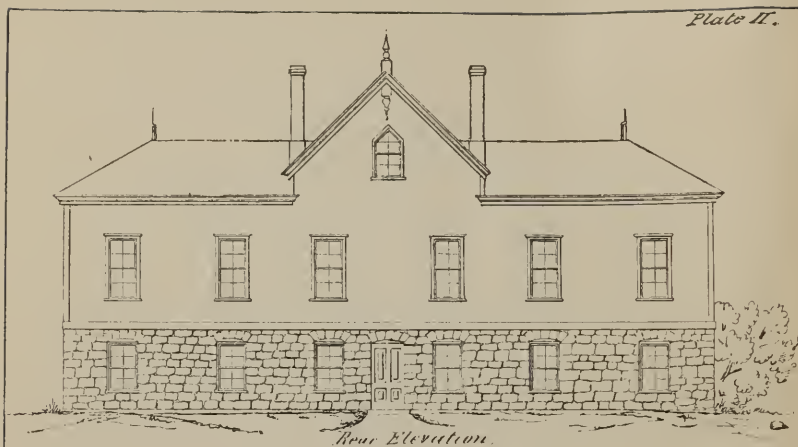
DESCRIPTION OF PLATES.

PLATE I.

Fig. 1. Front elevation.

Fig. 2. Plan of main floor, with an arrangement of five or seven beds for each ward.

Fig. 3. Plan of basement.



Rear Elevation.



Plan of Mice room.

*Proposed Plan for a
Small-pox Hospital.*

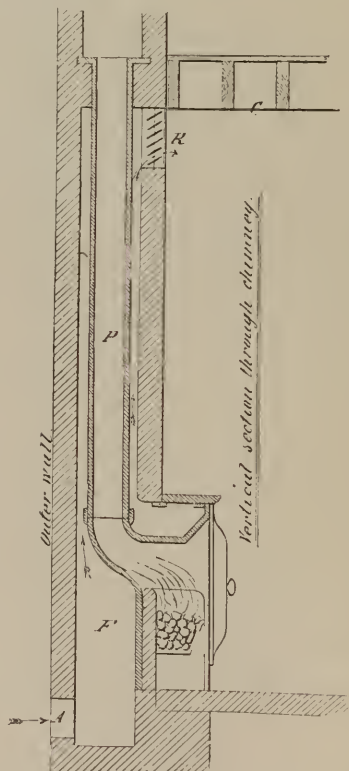


PLATE II.

Fig. 1. Rear elevation.

Fig. 2. Plan of attic room.

Fig. 3. Section (diagram) of a Galton fire-place (with blower applied), and chimney. (from Putnam's, "The open fire-place in all Ages.")

A. Duct for entrance of fresh air.

P. Iron pipe, leading from the throat of the grate to the flue above.

C. Ceiling.

F. Space behind grate, where, and at the sides of the grate, and around the iron pipe, the air in its ascent is heated.

R. Register or opening, just beneath the ceiling, through which the heated air enters the ward.

PLAN AND DESCRIPTION OF A SMALL POX HOSPITAL.

Site in the declivity of a hill, near the summit; excavation tile drained, and a drain of broken stone put inside the foundation wall, in three sides.

Foundation wall is of stone (ashler); the division walls and chimneys are brick. The upper structure is of wood (frame) with tarred paper under the weather boards.

The whole building has a length of 70 feet, with a width of 20 feet in the wings, and of 26 feet in the central portion, this projecting 6 feet, thus affording a hall, which contains the stairs.

The wings have a height to the eaves, in front of 12 feet, and in the rear of 20 feet, and to the ridge (from the top of the basement wall) of 20 feet; the central part has a height to the eaves of 18 feet, and to the ridge (above the top of basement wall) of 29 feet.

There are 24 windows, 14 of which have 8 14x20 panes of glass; 8 (in the basement) 8 14x14 panes, and the remaining 2 (in the attic) smaller ones. The 14 windows of the main floor are all provided with weights and pullies, and also with inside shutters, varnished.

The wood work had two coats of paint, and the floors of the wards, after being oiled, had three.

The ground floor, which is entered from the rear by a door, one or two steps above ground, contains three rooms, two end ones of 18x24 feet, and a center one of 20x24 feet. The two former are not floored, or otherwise furnished, but it was intended, at some future time, to erect a bin, at the end of one, for the storage of dry earth to be used in the earth-closets, with which the wards are provided; and also in a convenient corner near one of the chimneys, a chamber for the disinfection of bedding and clothing by dry heat.

The central room of the basement is intended for kitchen and laundry, being supplied with water from a cistern, a pump, a sink, a cooking stove and appliances; this room was floored over, but this was a mistake, it should have been of concrete, which is the only proper floor for a basement, when it is laid over a drained surface.

In the lowest corner in the hospital lot, which is enclosed by a board fence, a small privy is built, over a vault provided with an overflow pipe leading further down the hill and into cultivated ground. Into this vault or cesspool all the waste water is led. As there is no other water supply than that afforded by the cistern,





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